**Complex Numbers**

* The introduction of the number allows us to solve equations like , which traditionally we have stated as having no solutions (or no real solutions) as we cannot take the square root of a negative number.
* Using the definition , i.e. , we can solve equations like .
* Complex numbers are in general written in the form , where is the real part, and is the imaginary part.
* Complex numbers exist on the Argand plane. On an Argand diagram, the horizontal axis is called the **real axis**, and the vertical axis is called the **imaginary axis**.

i

4+2i

x

**Questions**

1. If and , find:

**a)** :

**b)**

**c)**

1. Expand in full.

Delta Ex 30.2 Q1, 4 Ex 30.3 Ex 30.4